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PATENT

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCE

APPLICANTS: R. MAYR ET AL EXAMINER: K. E. PETERSON

SERIAL NO.: 09/674,205 GROUP: 3724

FILED: OCTOBER 27, 2000

FOR: MILL SAW

Mail Stop: After Final
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In reply to the Office letter of February 17, 2005, please find enclosed a Brief in Support of Appeal, revised in accordance with 37 CFR 41.37.

Respectfully submitted,
REINHOLD MAYR ET AL

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I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on February 28, 2005.

Maria Guastella

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BRIEF IN SUPPORT OF APPEAL

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Dear Sir:

This is an appeal from the final rejection of claim 6.

REAL PARTY IN INTEREST

The real party in interest is the assignee, Wintersteiger GmbH.

RELATED APPEALS AND INTERFERENCES

The appellants and the appellants' legal representatives know of no other appeals or interferences which will directly affect or be directly affected by, or have a bearing on, the Board's decision in the pending appeal. Appellants' Brief in Support of an appeal from a prior final rejection of claim 6 was

filed on November 28, 2003 and the Examiner responded thereto by issuing an Office letter dated March 22, 2004, thereby reopening the prosecution.

STATUS OF CLAIMS

Claims 1-5 have been canceled. Claim 6 was finally rejected and is on appeal. Claims 7, 9 and 10 were withdrawn from consideration by the Examiner. Withdrawn claims 7, 9 and 10 depend on generic claim 6 and define specific features of the signal transmitter (claim 7), an input (claim 9), and specifically two motors (claim 10). These claims will presumably be allowable with allowed claim 6. Claim 8 is allowed.

SUMMARY OF CLAIMED SUBJECT MATTER

As described in the Substitute Specification, page 1, lines 8-14, and page 8, first 12 lines, and shown in the drawing, the present invention relates to a mill saw comprising a saw frame 3 comprising parallel saw blades 5 cutting only in a stroke direction, a slider-crank drive 4 imparting cutting strokes to the saw frame at a given frequency (see also page 4, line 4), and a feed conveyor 6 for feeding stock to be cut by the saw blades in a feed direction, the saw blades being cantilevered in the

feed direction, and the saw frame moving at a cutting speed relative to the stock during the cutting strokes (see also page 4, lines 8/9). At least one motor 10 separated from slider-crank drive 4 intermittently drives feed conveyor 6 conveying step-by-conveying step during the cutting strokes of saw frame 3 in dependence on the cutting speed.

Favorable cutting conditions are ensured with an accurate motor control to guarantee a long service life of the saw blades at comparatively high cutting rates (page 3, lines 14-16) by providing a controlling system 12 connected to the at least one motor 10 (page 8, lines 12/13), which controlling system comprises a stored computer control program 13 for the conveying steps adapted to the frequency of the cutting strokes (page 11, lines 13-16), and a signal transmitter 17 connected to controlling system 12, which signal transmitter transmits an electronic signal indicating a preset position of rotation of slider-crank drive 4 to the controlling system (page 3, penultimate line, to page 4, line 4, and page 5, line 10-12).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The Examiner has rejected claim 6 under 35 U.S.C. 103(a) as being unpatentable over Wallers (DE 3406455 A1) in view of

Gebhart '852 and Murray '135 on the following grounds:

"Wallers shows a cantilevered saw blade having all of the recited limitations including a saw frame (4), a slider crank drive (6), a feeder conveyor (11), a cantilevered blade (2), a conveyor motor (15), a controlling system (21) having a "stored control program" (39) and a signal transmitter (e.g. 9, 26).

"Wallers' elements are all mechanical. However, it has long been held to be obvious to update old mechanical machinery with modern electronics, usually because the electronics are cheaper and need not be specially manufactured for the given situation, but instead need only be programmed. Gebhart shows that it is well known to have a sensor (67) to sense the bottom stroke of the blade, and to send an electronic signal to a controller to cause incremental workfeed (lines 1-25, column 1).

"It would have been obvious to one of ordinary skill in the art to one of ordinary skill to have replaced Walters' mechanical system with an electronic sensor, as taught by Gebhart, in order to update Wallers' device with the cheaper and more flexible electronics.

"Neither Wallers' controller (21) nor Gebhart's controller

(line 9, column 8) is mentioned as being a programmed computer controller. Examiner takes Official Notice that it is old and well known to use a programmed computer to control incremental workfeed into a saw. An example of such is Murray on lines 61-65 of column 2. It would have been obvious to one of ordinary skill in the art to have further modified Wallers by making the controller a programmed computer controller, as taught by Murray, in order to update Wallers' device with the cheaper and more flexible electronics."

ARGUMENT

It is an essential feature of applicants' mill saw that an electronic signal indicating a preset position of rotation of the slider-crank drive be transmitted to the controlling system of the motor, as set forth at (f) in claim 6. In describing the Wallers reference, the Examiner has compared the reference's control disk 39 with the claimed "stored computer control program" and the claimed "signal transmitter" to Wallers' shafts 9, 26. In this analysis, it is respectfully submitted that the Examiner overlooked that Wallers' control depends on the angle of rotation of slider crank drive 6. In contrast to this, the control of applicants' motor 10 intermittently driving feed conveyor 6 is **independent of** the angle of rotation of slider-

crank drive 4. As shown in Fig. 4 and fully explained in the full paragraph on page 9 of the specification, the control sequence depends on the cutting stroke frequency. All that is required is a proper synchronization, which is assured by the claimed signal transmitter transmitting an electronic signal indicating a **preset** position of rotation of the slider-crank drive. Whether or not it may be obvious to "update old mechanical machinery with modern electronics," applicants' signal transmitter 17 is provided to indicate to the motor that a preset position of rotation of the slider-crank drive has been reached. In Walters, only control valve 21 controls the slider-crank drive. This control valve has a rotor fixedly connected to the slider-crank drive. Shafts 9, 26 do not suggest a **signal** transmitter, whether mechanical or electronic, for indicating a preset position of rotation of the slider-crank drive to control valve 21, so that the motor may actuate a conveying step which is independent of the angle of rotation of the slide-crank drive. Thus, the claimed arrangement fundamentally differs from Wallers, even if Wallers were electronically "updated." It is respectfully submitted that Wallers' mechanical control system does **not** perform the same function as applicants' features (e) and (f).

Wallers describes a hydraulic conveyor motor 15, hydraulic

fluid being delivered to motor 15 under control of control valve 21 whose control disc 39 is fixedly connected to crank shaft 9 by stub shaft 26 and crank 25 (see Fig. 2). Thus, control disc 39 is rotated in phase with crank shaft 9. The control disc has a control recess 48 (Fig. 4) communicating with return conduit 22 (Fig. 1) so that hydraulic fluid pump 18 is connected to the return conduit while recess 48 is in communication with return conduit 22 and does not deliver hydraulic fluid to motor 15. Thus, conveyance by motor 15 is interrupted during that period. Because of curvature 47 of control recess 48, the opening and closing of return conduit 22 proceeds smoothly, rather than abruptly, so that motor 15 is accelerated and braked smoothly. At any rate, the control of the motor depends on, and is determined by, the position of rotation of crank shaft 9 because control disc 39 is fixedly connected to the crank shaft by stub shaft 26 and crank 25.

As Fig. 1 of Wallers shows, control valve 21 connects pump 18 to motor 15 during the major portion of the rotation of the valve, i.e. except when recess 48 communicates with return conduit 22, during which time the speed of the motor is constant. During the short period that recess 48 communicates with return conduit 22, the motor is slowly braked and then slowly accelerated again. Thus, feature (d) of claim 6 is also absent

from Wallers because motor 15 is operated at a constant speed, except for the short transition periods when it is braked and accelerated, it is not intermittently driven in dependence on the cutting speed. In other words, the structure and operation of applicants' device differ fundamentally from Wallers.

In the claimed mill saw, there is no dependency between the angle of rotation of slider crank drive 4 and motor 10 driving feed conveyor 6. Of course, feed conveyor 6 must be synchronized with slider crank drive 4. This is effected according to feature (f) of claim 6 by transmitting an electronic signal indicating a preset position of rotation of the slider crank drive to controlling system 12 of motor 10. When the motor receives the signal, it can be driven independently of the position of rotation of the slide crank drive, as is shown in Fig. 4. As illustrated, the motors driving feed conveyor 6 are driven at an appropriate rate of feed v_a of feed conveyor 6 before the feed conveyor is driven according to speed gradient curve 19 of saw frame 3. The control of the rate of feed v_a, which may be adapted to different operating conditions, is independent from the angle of rotation of slider crank drive 4 at this time of the operation, and the subsequent rate of feed is not controlled in dependence on the angle of rotation. Thus, the Examiner is respectfully submitted to be incorrect in holding that the control of motor 10 is not independent of the angle of rotation of the slide crank drive.

Gebhart's saw blade position sensor 67 is a switch which controls the advance of saw blade table or carriage 4 and serves to terminate the advance at the end of the work stroke (col. 8, lines 1-25). If it were obvious to modify Wallers by Gebhart's teaching, the inlet and outlet of edge 47 of recess 46 in control disk 39 would be sensed by a sensor to switch motor 15 on and off. However, switching the motor on and off in dependence on the position of rotation of a slide-crank drive is not the object of the claimed invention since it requires sensing of two positions of rotation of the slide-crank drive, one position controlling the switching on of the motor and the other position controlling its switching off. Thus, no combination of Gebhart with Wallers leads to the subject matter set forth at (e) and (f) of claim 6.

Concerning the Examiner's explanation that he proposes to replace Wallers' mechanical system by Gebhart's electronic system, this approach does not change the substance of applicants' arguments. According to Gebhart, sensing device 66 connected to the saw blade may be provided to control the displacement of saw table 4. Since the position of the saw blade in Wallers depends solely on the angle of rotation of the slide crank drive for the saw blade, the use of Gebhart's sensing device 66 in Wallers again makes the control of drive of the feed conveyor dependent on the angle of rotation of the slide crank

drive, which is to be avoided in the claimed mill saw.

All that Murray suggests is a computer control for the **feed** rolls 18, 20, 21 and cut-off saw pivot arm 27. Nothing in the cited patents makes it obvious to use such a computer control program in Wallers and/or Gebhart, nor would it make sense to use such a program in the Wallers and Gebhart devices since their motors are switched on in one position of rotation of the slide-crank drive and are switched off in another position of rotation. Thus, no combination of Gebhart and/or Murray with Wallers makes the subject matter of claim 6 obvious.

Wallers, Gebhart and Murray deal with totally different systems and problems so that a modification of Wallers by Gebhart and/or Murray was not obvious at the time the present invention was made. In this respect, the Court's decision in **In re Imperato**, 179 USPQ 730, is merely representative of numerous like holdings in stating that

> "...the mere fact that those disclosures can be combined does not make the combination obvious unless the art also contains something to suggest the desirability of the combination (emphasis by Court)."

The art of record is respectfully submitted **not** "to suggest the desirability of the combination." While electronic **equivalents** may be ubiquitous, applicants have not provided

electronic equivalents but a control system (using electronics) that differs fundamentally from that of Wallers or the secondary reference.

Appellants accordingly respectfully submit that they are entitled to a patent incorporating claim 6 under 35 U.S.C. 103(a). An Appendix containing the appealed claim, the allowed claim and the withdrawn claims is attached to this brief. Please charge the official fee of $85.00 (small entity) to Deposit Account No. 03-2468. This is the difference between the present official fee for filing this second appeal and the fee paid for filing the first appeal brief. If any additional fee is required, please charge deposit account 03-2468.

Respectfully submitted,
REINHOLD MAYR ET AL

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Enclosure: Appendix

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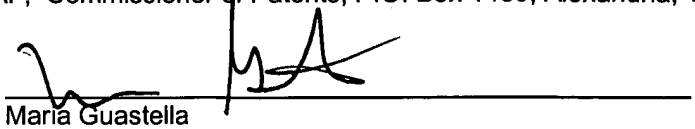

Maria Guastella

APPENDIX

Claim 6 (appealed).

A mill saw comprising

(a) a saw frame comprising parallel saw blades cutting only in a stroke direction,

(b) a slider-crank drive imparting cutting strokes to the saw frame at a given frequency,

(c) a feed conveyor for feeding stock to be cut by the saw blades in a feed direction,

(1) the saw blades being cantilevered in the feed direction, and

(2) the saw frame moving at a cutting speed relative to the stock during the cutting strokes,

(d) at least one motor separated from the slider-crank drive for intermittently driving the feed conveyor conveying step-by-conveying step during the cutting strokes of the saw frame in dependence on the cutting speed,

(e) a controlling system connected to the at least one motor, the controlling system comprising

(1) a stored computer control program for the conveying steps adapted to the frequency of the cutting strokes, and

(f) a signal transmitter connected to the controlling system, the signal transmitter transmitting an electronic signal indicating a preset position of rotation of the slider-crank drive to the controlling system.

7 (withdrawn). The mill saw of claim 6, wherein the signal transmitter consists of a sensor for the dead center of the slider-crank drive at an end of the cutting strokes.

8 (allowed). A mill saw comprising

(a) a saw frame comprising parallel saw blades cutting only in a stroke direction,

(b) a slider-crank drive imparting cutting strokes to the saw frame at a given frequency,

(c) a feed conveyor for feeding stock to be cut by the saw blades in a feed direction,

(1) the saw blades being cantilevered in the feed direction, and

(2) the saw frame moving at a cutting speed relative to the stock during the cutting strokes,

(d) at least one motor separated from the slider-crank drive for intermittently driving the feed conveyor conveying step-by-conveying step during the cutting strokes of the saw frame in dependence on the cutting speed,

(e) a controlling system connected to the at least one motor, the controlling system comprising

(1) a stored computer control program for the conveying steps adapted to the frequency of the cutting strokes, the stored control program comprising a first memory for a control program dependent on the speed of the slider-crank drive and a second memory independent thereof for feeding the stock to be cut in dependence on a saw blade disengagement determined by the cantilever of the saw blades, and

(f) a signal transmitter connected to the controlling system, the signal transmitter transmitting an electronic signal indicating a preset position of rotation of the slider-crank drive to the controlling system.

9 (withdrawn). The mill saw of claim 6, further comprising an input for various control parameters connected to the controlling system.

10 (withdrawn). The mill saw of claim 6, comprising two of said motors separately controlled by the controlling system, the motors being arranged, respectively, upstream and downstream of the saw frame in the feed direction.